Ingenieurhydrologie Modellierung

|Blaney-Criddle.r

```
t <- c(0:35);
d <- 0.85;
k <- 1.90;
E <- (0.142*t+1.095)*(t+17.8)*k*d;
plot(t, E);
```

Lineare Regression rechnen

|Blaney-Criddle.r

```
#' ---
#' title: "Lineae Regression"
#' author: "C. Kuells"
#' date: "9. Mai, 2015"
#' ---
x <- c(-2, -1, -0.8, -0.3, 0, 0.5, 0.6, 0.7, 1, 1.2)
y <- c(1.9, 0.6, 0.5, 0.8, -0.4, -0.9, -0.7, -0.1, -1.7, -0.2)
fm <- lm(y ~ x)
#+ fig.width=5, fig.height=5
plot(x, y, xlim = c(-3, 3), ylim = c(-3, 3), pch = 19)
fitted.values(fm)
residuals(fm)
#+ fig.width=5, fig.height=5
plot(x, y, xlim = c(-3, 3), ylim = c(-3, 3), pch = 19)
abline(fm, col = "red")
```

Datein einlesen

```
wd <- getwd()
setwd("C:\HydroPro\R+")
klima <- read.csv(file="c:/HydroPro/R+/fuhlsbuettel.txt", header=TRUE,
sep=";", na.string="-999")
summary(klima)
attach(klima)
```

Kontrollstrukturen

```
if (bed1 < eps)
      return(a1 + a2)
    else {
      return()
    }
```

```
for (i in 1:1000) {
     N[i]
   }
```

Erstes Modell

```
setwd("C:\\HydroPro\\R+")

klima <- read.csv(file="fuhlsbuettel.txt", header=TRUE, sep=";")
# Fehlwerte richtig einlesen

summary(klima)
attach(klima)
N <- NIEDERSCHLAGSHOEHE

Flaeche <- 640 # km2
A <- 0.08 # Abflusskoeffizient
Va <- 10 # mm Anfangsverlust

Q <- (N)*A*(Flaeche*1000000)*1/1000*1/86400 # Einheitenumwandlung Flaeche m2
-> km2, Volumen l-> qm, Zeit Tag -> Sekunde
plot(Q, ylim = c(0, 10))
```